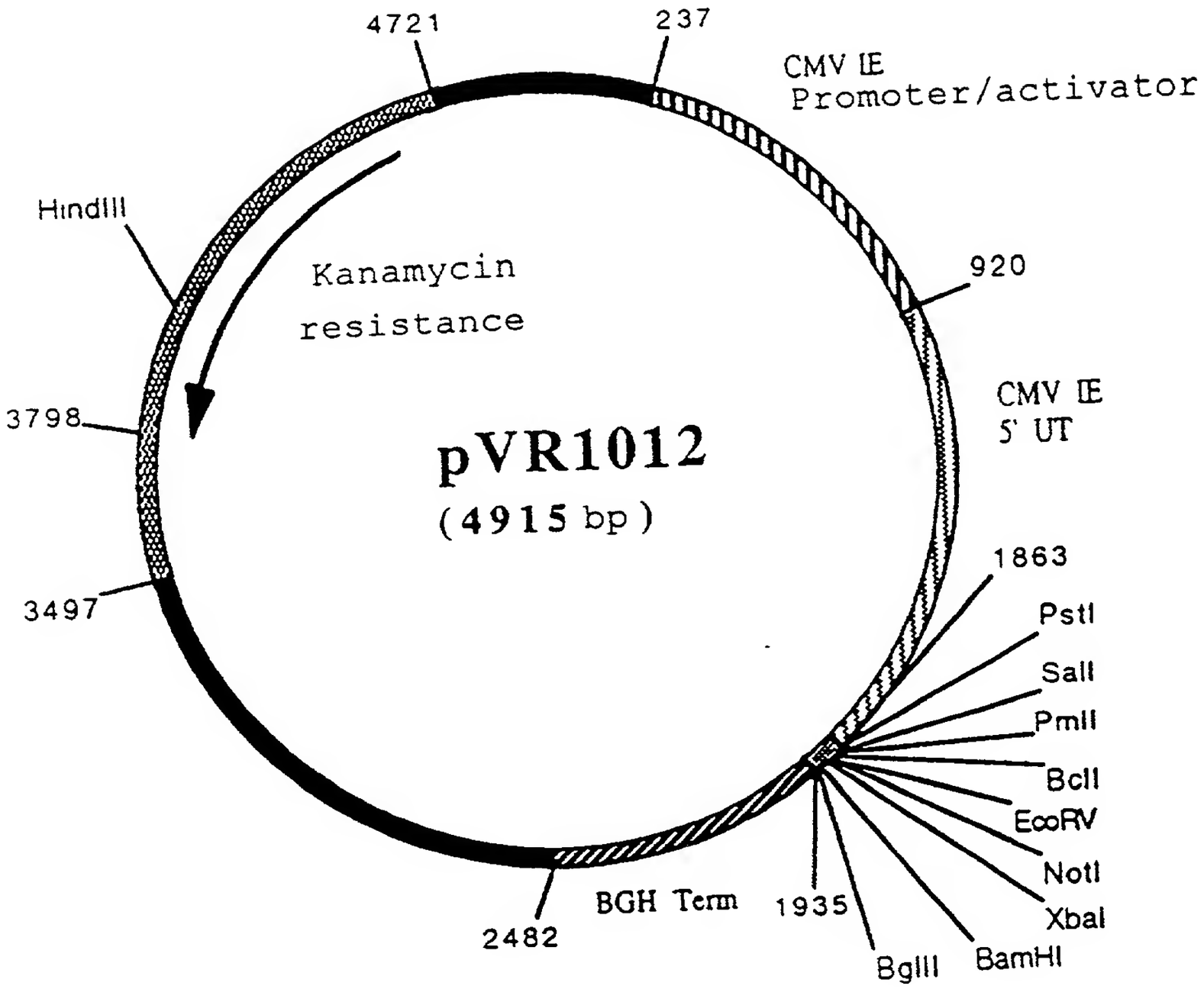
4721
237
CMV IE
Promoter/activator
HindIII
Kanamycin
resistance
920
CMV IE
5' UT
3798
pVR1012
(4915 bp)
1863
PstI
SalI
PmlI
BclI
EcoRV
NotI
XbaI
BamHI
BglII
1935
BGH Term
2482
3497

Figure No. 1

```
   1 ATGGCCGCTCGCGGCGGTGCTGAACGCGCCGCGGGCGCCGGAGACGGTCGGCGAGGACAGCGT
   1 MetAlaAlaArgGlyGlyAlaGluArgAlaAlaGlyAlaGlyAspGlyArgArgGlyGlnArg

  64 CGTCATCTACGACCGGGACGTGTTCTCGCTGCTCTACGCGGTCCTGCAGCGCCTGGCGCCGGC
  22 ArgHisLeuArgProGlyArgValLeuAlaAlaLeuArgGlyProAlaAlaProGlyAlaGly

 127 GGGGCGCGCGCCGCGCTAGCCGCTGCCCTGCTATGGGCGACGTGGGCCCTGCTGCTGGCGGCG
  43 GlyAlaArgAlaAlaLeuAlaAlaAlaLeuLeuTrpAlaThrTrpAlaLeuLeuLeuAlaAla

 190 CCCGCCGCGGGGCGACCGGCGACAACGCCCCCGGCGCCCCCGCCCGAAGAGGCCGCGAGCCCG
  64 ProAlaAlaGlyArgProAlaThrThrProProAlaProProProGluGluAlaAlaSerPro

 253 GCGCCCCCCGCGAGCCCCAGCCCCCCCGGCCCCGACGGCGACGACGCCGCCAGCCCCGACAAC
  85 AlaProProAlaSerProSerProProGlyProAspGlyAspAspAlaAlaSerProAspAsn

 316 AGCACAGACGTGCGCGCCGCGCTCCGGCTCGCGCAGGCGGCCGGGGAAAACTCGCGCTTCTTC
 106 SerThrAspValArgAlaAlaLeuArgLeuAlaGlnAlaAlaGlyGluAsnSerArgPhePhe

 379 GTGTGCCCGCCGCCCTCGGGCGCCACGGTGGTCCGGCTCGCGCCCGCGCGGCCGTGCCCTGAG
 127 ValCysProProProSerGlyAlaThrValValArgLeuAlaProAlaArgProCysProGlu

 442 TACGGGCTCGGGCGGAACTACACGGAGGGCATCGGCGTCATTTACAAGGAGAACATCGCGCCG
 148 TyrGlyLeuGlyArgAsnTyrThrGluGlyIleGlyValIleTyrLysGluAsnIleAlaPro

 505 TACACGTTCAAGGCCTACATTTACAAAAACGTGATCGTGACCACGACCTGGGCGGGCAGCACG
 169 TyrThrPheLysAlaTyrIleTyrLysAsnValIleValThrThrThrTrpAlaGlySerThr

 568 TACGCGGCCATTACAAACCAGTACACGGACCGCGTGCCCGTGGGCATGGGCGAGATCACGGAC
 190 TyrAlaAlaIleThrAsnGlnTyrThrAspArgValProValGlyMetGlyGluIleThrAsp

 631 CTGGTGGACAAGAAGTGGCGCTGCCTTTCGAAAGCCGAGTACCTGCGCAGCGGGCGCAAGGTG
 211 LeuValAspLysLysTrpArgCysLeuSerLysAlaGluTyrLeuArgSerGlyArgLysVal

 694 GTGGCCTTTGACCGCGACGACGACCCCTGGGAGGCGCCGCTGAAGCCTGCGCGGCTGAGCGCG
 232 ValAlaPheAspArgAspAspAspProTrpGluAlaProLeuLysProAlaArgLeuSerAla

 757 CCCGGGGTGCGGGGCTGGCACACGACGGACGATGTGTACACGGCGCTGGGCTCGGCGGGGCTC
 253 ProGlyValArgGlyTrpHisThrThrAspAspValTyrThrAlaLeuGlySerAlaGlyLeu

 820 TACCGCACGGGCACCTCTGTGAACTGCATCGTGGAAGAAGTGGAGGCGCGCTCGGTGTACCCG
 274 TyrArgThrGlyThrSerValAsnCysIleValGluGluValGluAlaArgSerValTyrPro

 883 TACGACTCGTTCGCGCTCTCGACCGGGGACATTATCTACATGTCGCCCTTTTACGGGCTGCGC
 295 TyrAspSerPheAlaLeuSerThrGlyAspIleIleTyrMetSerProPheTyrGlyLeuArg

 946 GAGGGCGCGCACCGCGAGCACACCAGGCTACTCGCCGGAGCGCTTCCAGCAGATCGAGGGCTA
 316 GluGlyAlaHisArgGluHisThrArgLeuLeuAlaGlyAlaLeuProAlaAspArgGlyLeu

1009 CTACAAGCGCGACATGGCCACGGGCCGGCGCCTCAAGGAGCCGGTCTCGCGGAACTTTTTGCG
 337 LeuGlnAlaArgHisGlyHisGlyProAlaProGlnGlyAlaGlyLeuAlaGluLeuPheAla

1072 TACACAGCACGTGACGGTAGCCTGGGACTGGGTGCCCAAGCGCAAAAACGTGTGCTCGCTGGC
 358 TyrThrAlaArgAspGlySerLeuGlyLeuGlyAlaGlnAlaGlnLysArgValLeuAlaGly
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Figure No. 2

```
1135 CAAGTGGCGCGAGGCGGACGAAATGCTGCGAGACGAGAGCCGCGGGAACTTCCGCTTCACGGC
 379 GlnValAlaArgGlyGlyArgAsnAlaAlaArgArgGluProArgGluLeuProLeuHisGly

1198 CCGCTCGCTCTCGGCGACCTTTGTGAGCGACAGCCACACCTTCGCGTTGCAGAATGTGCCGCT
 400 ProLeuAlaLeuGlyAspLeuCysGluArgGlnProHisLeuArgValAlaGluCysAlaAla

1261 GAGCGACTGCGTGATCGAAGAGGCCGAGGCCGCGGTCGAGCGCGTCTACCGCGAGCGCTACAA
 421 GluArgLeuArgAspArgArgGlyArgGlyArgGlyArgAlaArgLeuProArgAlaLeuGln

1324 CGGCACGCACGTGCTGTCGGGCAGCTTGGAGACGTACCTGGCGCGCGGCGGCTTTGTCGTGGC
 442 ArgHisAlaArgAlaValGlyGlnLeuGlyAspValProGlyAlaArgArgLeuCysArgGly

1387 CTTCCGGCGATGCTCAGCAACGAGCTGGCCAAGCTGTACCTGCAGGAGCTGGCGCGCTCGAAC
 463 LeuProAlaMetLeuSerAsnGluLeuAlaLysLeuTyrLeuGlnGluLeuAlaArgSerAsn

1450 GGCACGCTCGAGGGGCTGTTCGCCGCCGCGGCGCCCAAGCCGGGCCCGCGGCGCGCGCGCCGC
 484 GlyThrLeuGluGlyLeuPheAlaAlaAlaAlaProLysProGlyProArgArgAlaArgArg

1513 GCCGCGCCGTCTGCGCCCGGCGGCCCGGGCGCGGCCAACGGGCCCGCCGGCGACGGCGACGCC
 505 AlaAlaProSerAlaProGlyGlyProGlyAlaAlaAsnGlyProAlaGlyAspGlyAspAla

1576 GGCGGGCGGGTGACTACCGTGAGCTCGGCCGAGTTTGCGGCGCTGCAGTTCACCTACGACCAC
 526 GlyGlyArgValThrThrValSerSerAlaGluPheAlaAlaLeuGlnPheThrTyrAspHis

1639 ATCCAGGACCACGTGAACACCATGTTCAGCCGCCTGGCCACGTCCTGGTGCCTGCTGCAGAAC
 547 IleGlnAspHisValAsnThrMetPheSerArgLeuAlaThrSerTrpCysLeuLeuGlnAsn

1702 AAGGAGCGCGCCCTGTGGGCCGAGGCGGCTAAGCTCAACCCCAGCGCGGCGGCCAGCGCTGCG
 568 LysGluArgAlaLeuTrpAlaGluAlaAlaLysLeuAsnProSerAlaAlaAlaSerAlaAla

1765 CTGGACCGCCGCGCCGCCGCGCGCATGTTGGGGGACGCCATGGCCGTGACGTACTGCCACGAG
 589 LeuAspArgArgAlaAlaAlaArgMetLeuGlyAspAlaMetAlaValThrTyrCysHisGlu

1828 CTGGGCGAGGGGCGCGTGTTCATCGAGAACTCGATGCGCGCGCCCGGCGGCGTTTGCTACAGC
 610 LeuGlyGluGlyArgValPheIleGluAsnSerMetArgAlaProGlyGlyValCysTyrSer

1891 CGCCCGCCGGTCTCCTTTGCCTTCGGCAACGAGAGCGAGCCGGTGGAGGGCCAGCTCGGCGAG
 631 ArgProProValSerPheAlaPheGlyAsnGluSerGluProValGluGlyGlnLeuGlyGlu

1954 GACAACGAGCTGCTGCCGGGCCGCGAGCTCGTGGAGCCCTGCACCGCCAACCACAAGCGCTAC
 652 AspAsnGluLeuLeuProGlyArgGluLeuValGluProCysThrAlaAsnHisLysArgTyr

2017 TTCCGCTTTGGCGCGGACTACGTGTACTACGAGAACTACGCGTACGTGCGGCGGGTCCCGCTC
 673 PheArgPheGlyAlaAspTyrValTyrTyrGluAsnTyrAlaTyrValArgArgValProLeu

2080 GCGGAGCTGGAGGTGATCAGCACCTTTGTGGACCTAAACCTCACGGTTCTGGAGGACCGCGAG
 694 AlaGluLeuGluValIleSerThrPheValAspLeuAsnLeuThrValLeuGluAspArgGlu

2143 TTCTTGCCGCTAGAAGTGTACACGCGCGCCGAGCTCGCCGACACGGGTCTGCTCGACTACAGC
 715 PheLeuProLeuGluValTyrThrArgAlaGluLeuAlaAspThrGlyLeuLeuAspTyrSer

2206 GAGATACAGCGCCGCAACCAGCTGCACGAGCTCCGGTTCTACGACATTGACCGCGTGGTCAAG
 736 GluIleGlnArgArgAsnGlnLeuHisGluLeuArgPheTyrAspIleAspArgValValLys
```

Figure No. 2 (continuation)

```
2269  ACGGACGGCAATATGGCCATCATGCGAGGGCTCGCCAACTTCTTTCAGGGCCTGGGCGCCGTC
 757▶ThrAspGlyAsnMetAlaIleMetArgGlyLeuAlaAsnPhePheGlnGlyLeuGlyAlaVal

2332  GGGCAGGCGGTGGGCACGGTGGTGCTGGGCGCCGCGGGTGCCGCGCTCTCGACCGTGTCGGGC
 778▶GlyGlnAlaValGlyThrValValLeuGlyAlaAlaGlyAlaAlaLeuSerThrValSerGly

2395  ATCGCCTCGTTTATTGCGAACCCGTTCGGCGCGCTGGCCACGGGGCTGCTGGTGCTCGCCGGG
 799▶IleAlaSerPheIleAlaAsnProPheGlyAlaLeuAlaThrGlyLeuLeuValLeuAlaGly

2458  CTGGTGGCCGCTTTCCTGGCGTACCGGTACATTTCCCGCCTCCGCAGCAACCCCATGAAGGCG
 820▶LeuValAlaAlaPheLeuAlaTyrArgTyrIleSerArgLeuArgSerAsnProMetLysAla

2521  CTGTACCCGATCACCACGCGCGCGCTCAAGGACGACGCCCGGGGCGCAACCGCCCCGGGCGAG
 841▶LeuTyrProIleThrThrArgAlaLeuLysAspAspAlaArgGlyAlaThrAlaProGlyGlu

2584  GAAGAGGAGGAGTTTGACGCGGCCAAACTGGAGCAGGCCCGCGAGATGATCAAGTATATGTCG
 862▶GluGluGluGluPheAspAlaAlaLysLeuGluGlnAlaArgGluMetIleLysTyrMetSer

2647  CTCGTGTCAGCGGTCGAGCGGCAAGAGCACAAGGCGAAAAAGAGCAACAAGGGCGGCCCGCTG
 883▶LeuValSerAlaValGluArgGlnGluHisLysAlaLysLysSerAsnLysGlyGlyProLeu

2710  CTGGCGACCCGGCTGACGCAGCTCGCGCTTCGGCGGCGAGCGCCGCCGGAGTACCAGCAGCTT
 904▶LeuAlaThrArgLeuThrGlnLeuAlaLeuArgArgArgAlaProProGluTyrGlnGlnLeu

2773  CCGATGGCCGACGTCGGGGGGGCATGA
 925▶ProMetAlaAspValGlyGlyAla•••
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Figure No. 2 (end)

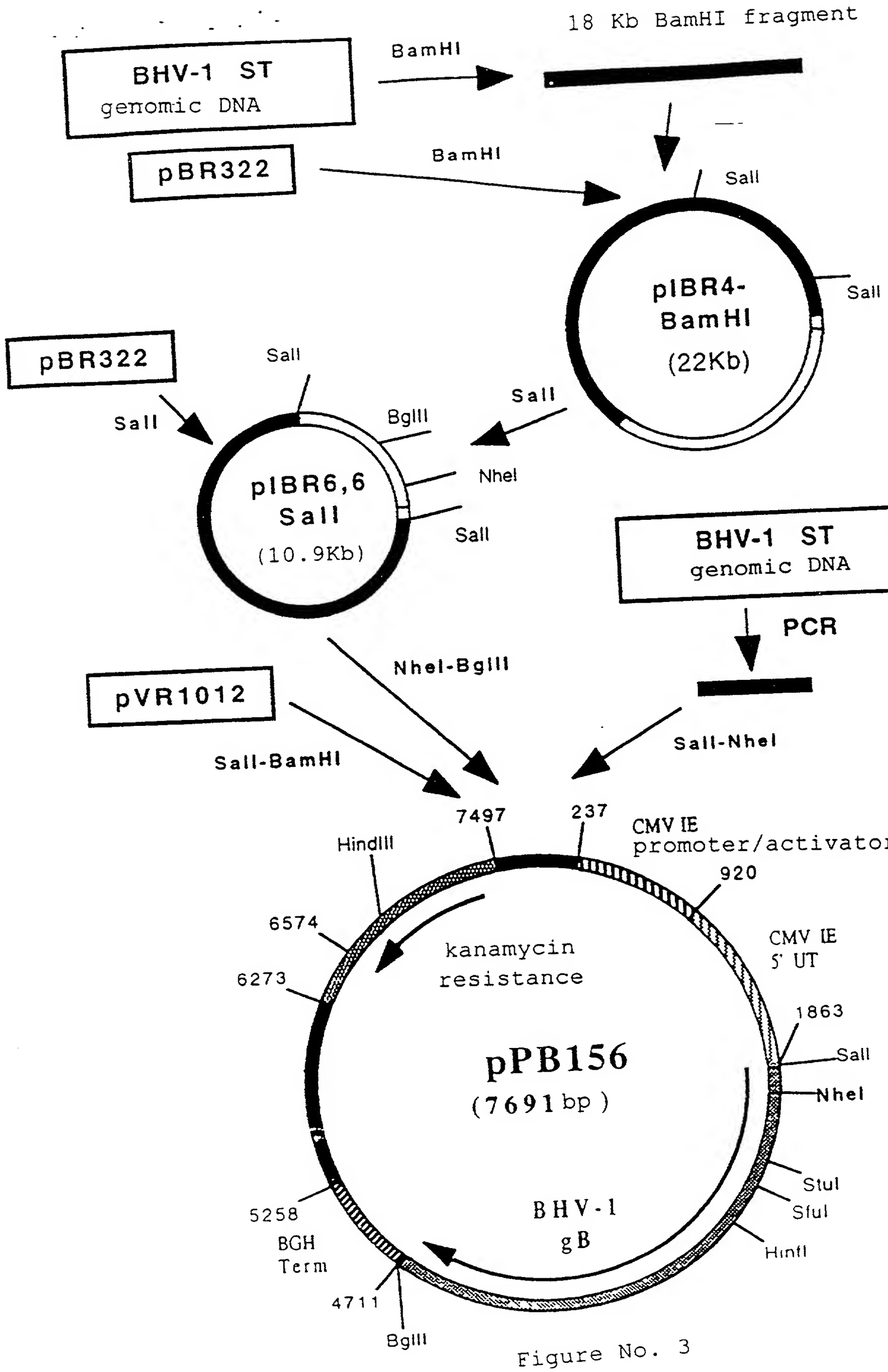
BHV-1 ST
genomic DNA
BamHI
18 Kb BamHI fragment
pBR322
BamHI
SalI
pIBR4-
BamHI
(22Kb)
SalI
pBR322
SalI
SalI
BglII
NheI
SalI
pIBR6,6
SalI
(10.9Kb)
BHV-1 ST
genomic DNA
PCR
pVR1012
NheI-BglII
SalI-BamHI
SalI-NheI
7497
237
CMV IE
promoter/activator
HindIII
920
6574
CMV IE
5' UT
kanamycin
resistance
6273
1863
SalI
NheI
pPB156
(7691 bp)
StuI
SfuI
BHV-1
gB
HintI
5258
BGH
Term
4711
BglII

Figure No. 3

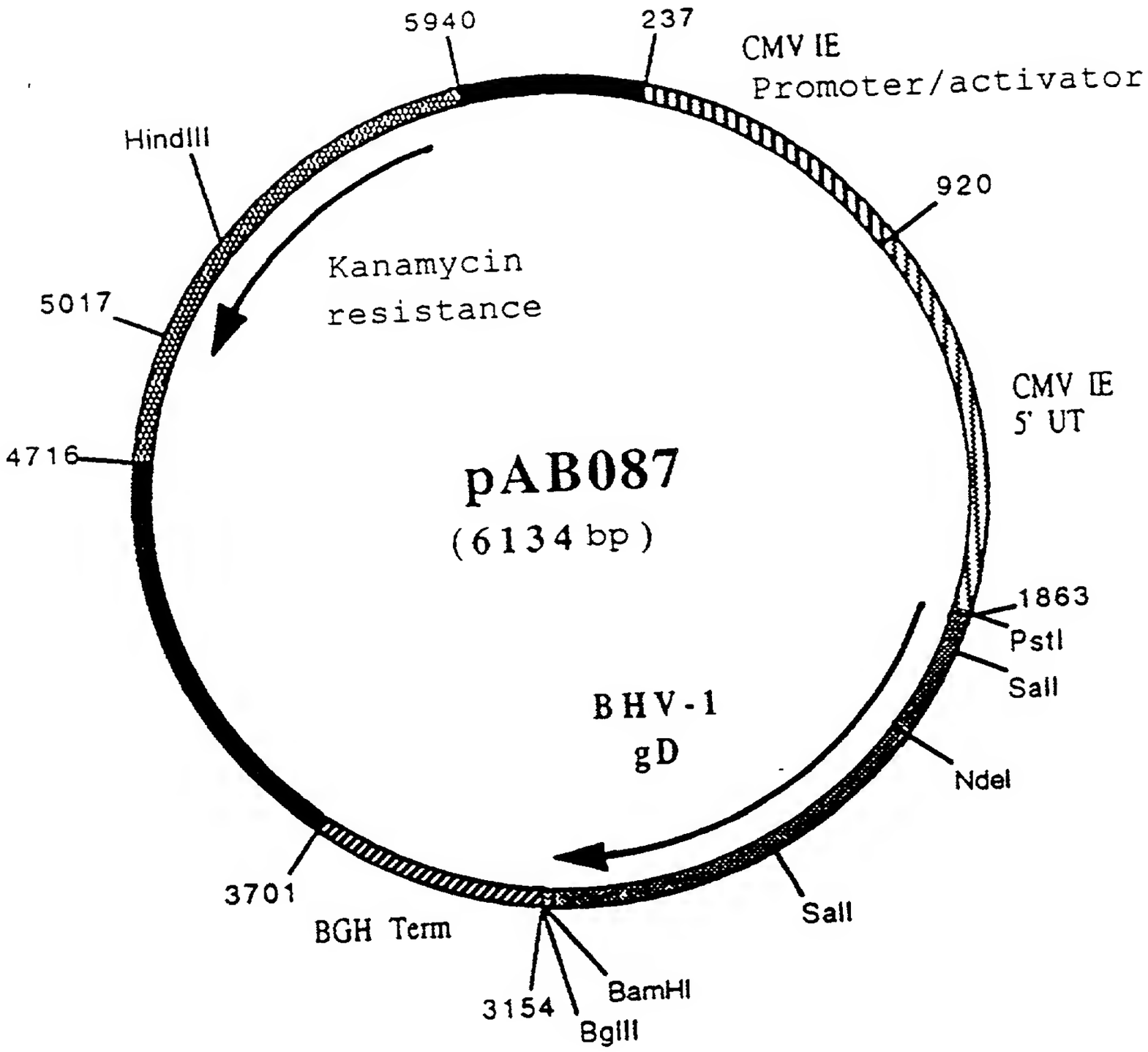
5940
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5017
CMV IE
5' UT
4716
pAB087
(6134 bp)
1863
PstI
SalI
BHV-1
gD
NdeI
3701
SalI
BGH Term
BamHI
3154
BglII

Figure No. 4

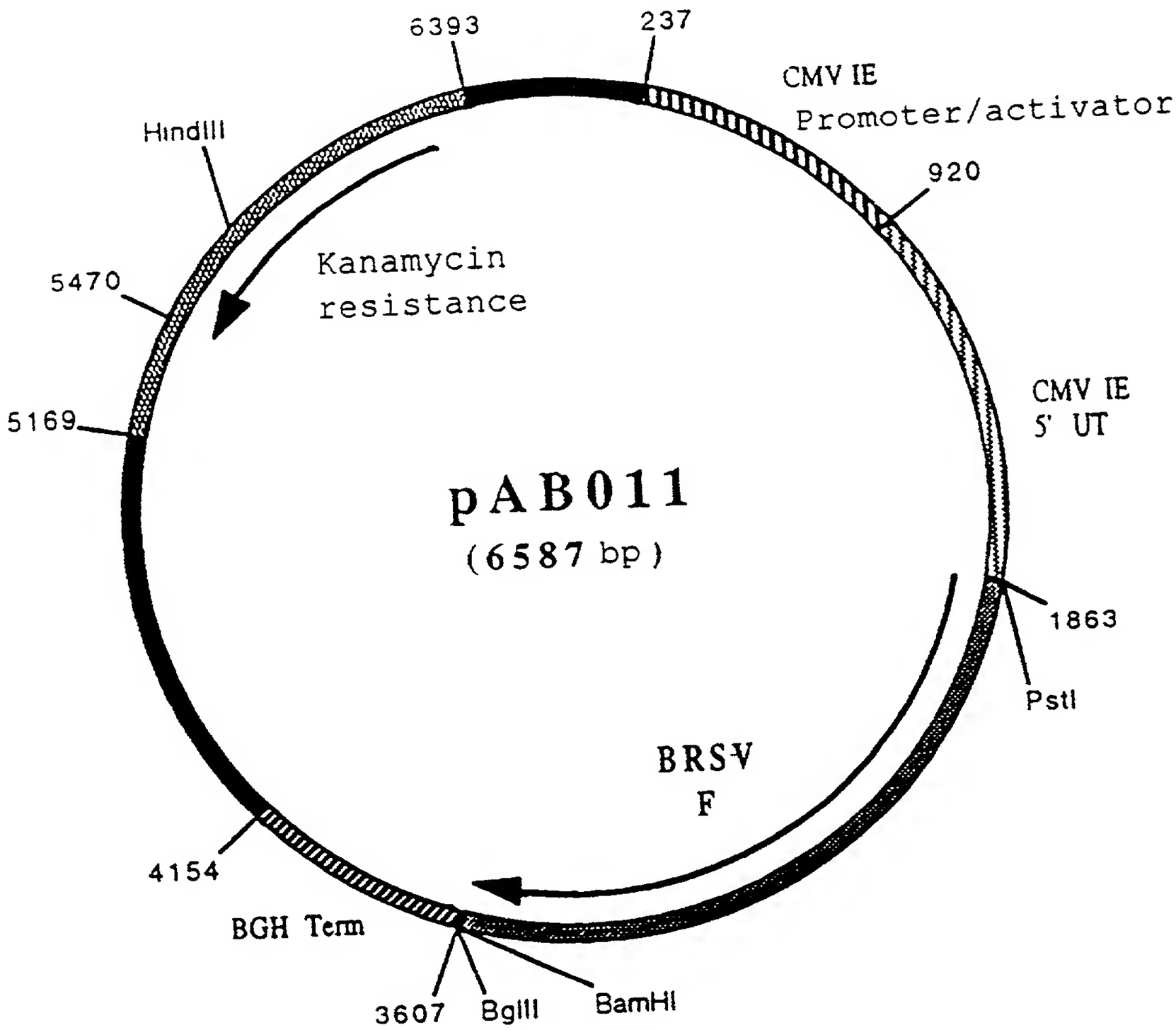
6393
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5470
5169
CMV IE
5' UT
pAB011
(6587 bp)
1863
PstI
BRSV
F
4154
BGH Term
3607
BglII
BamHI

Figure No. 5

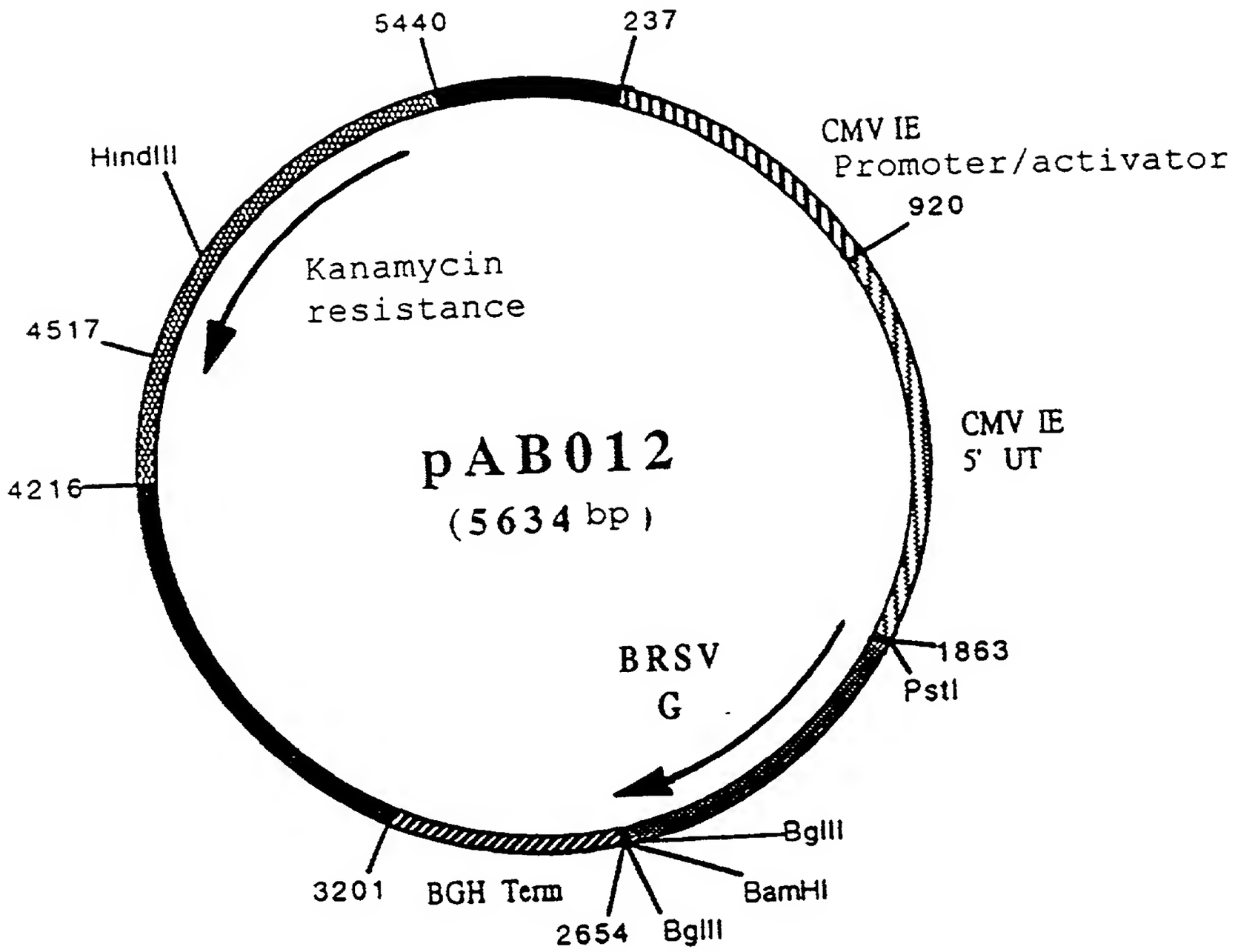
5440
237
HindIII
CMV IE
Promoter/activator
920
Kanamycin
resistance
4517
4216
pAB012
(5634 bp)
CMV IE
5' UT
1863
PstI
BRSV
G
BglII
BamHI
3201
BGH Term
2654
BglII

Figure No. 6

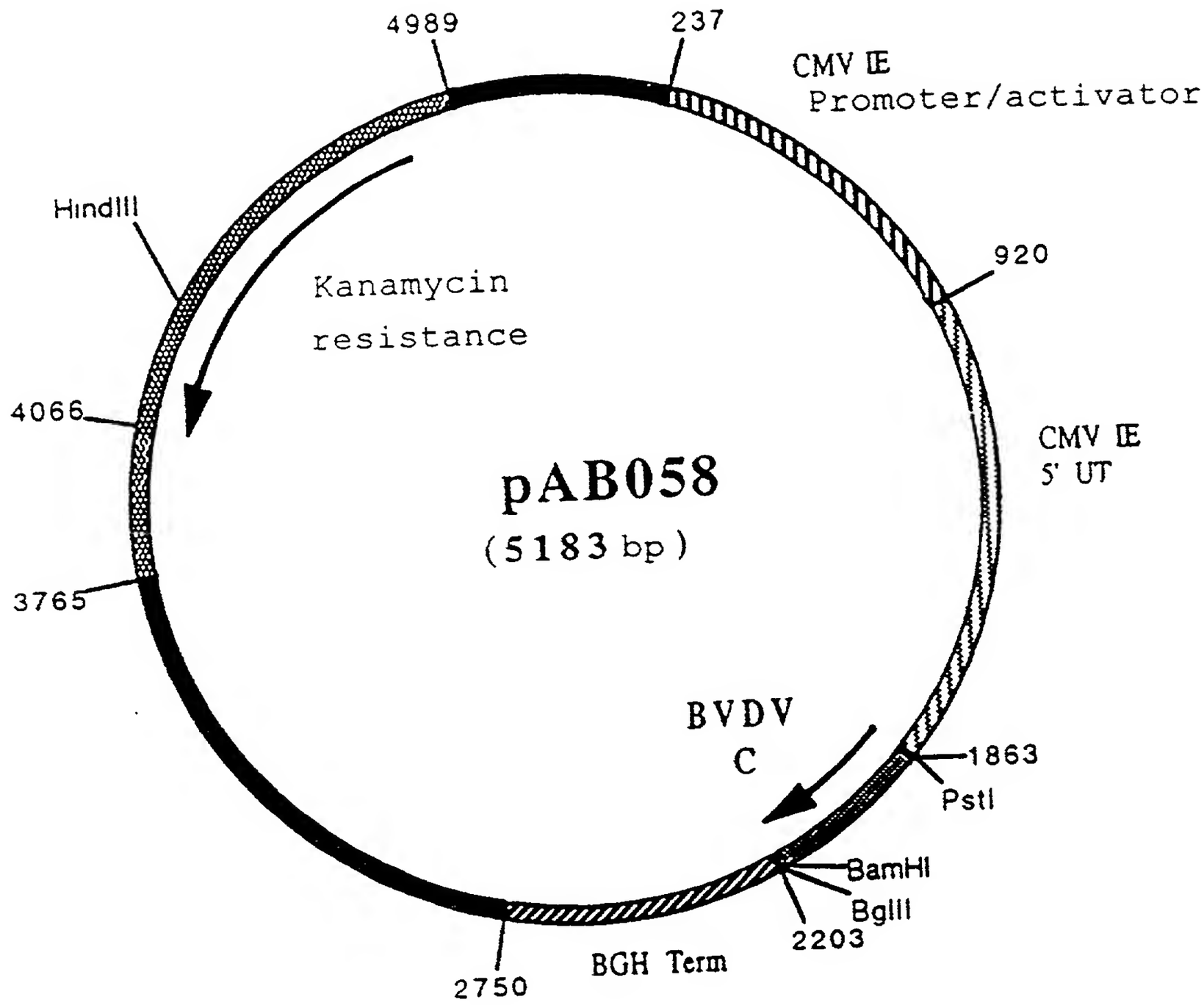
4989
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
4066
CMV IE
5' UT
pAB058
(5183 bp)
3765
BVDV
C
1863
PstI
BamHI
BglII
2203
BGH Term
2750

Figure No. 7

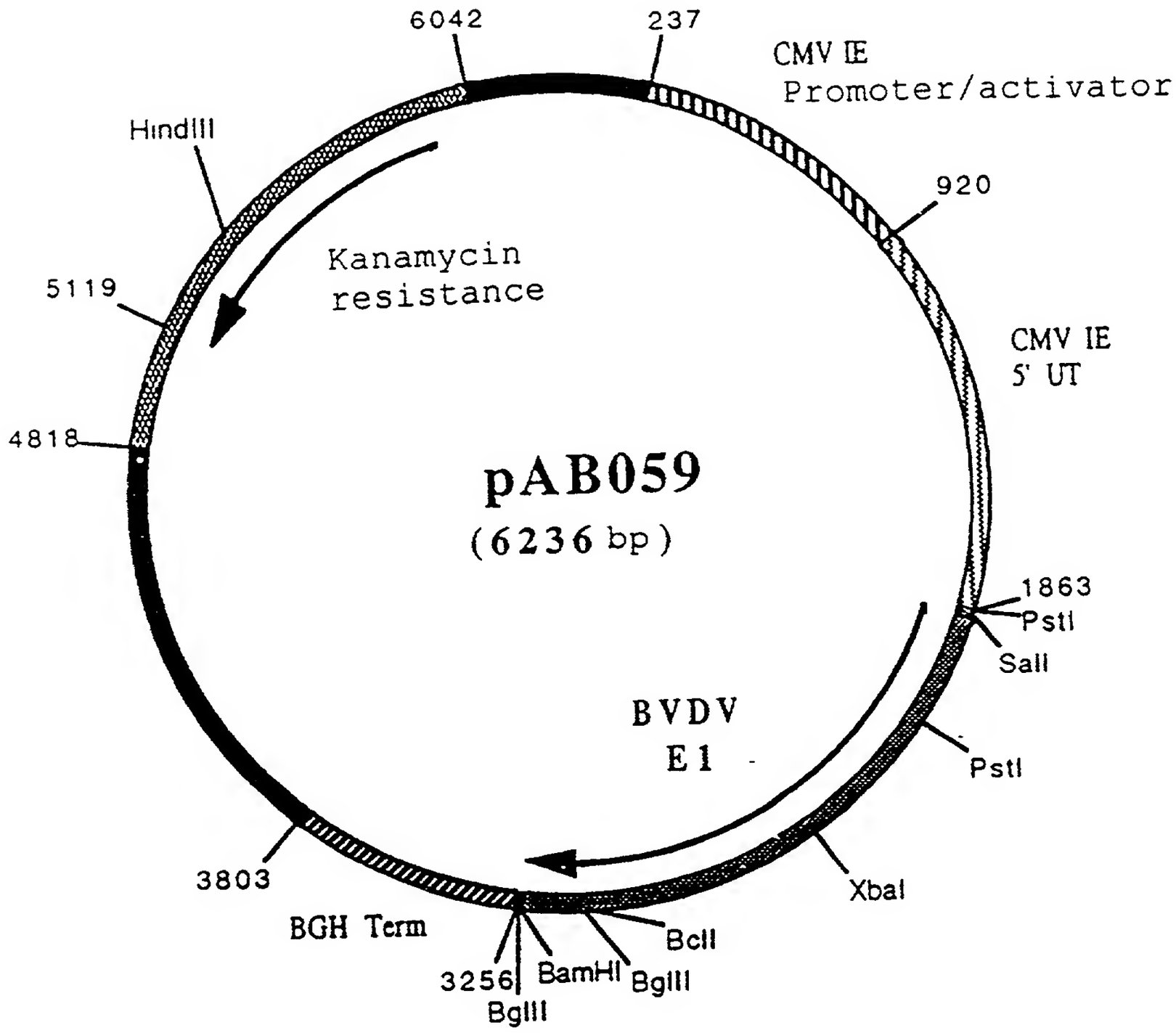
6042
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5119
CMV IE
5' UT
4818
pAB059
(6236 bp)
1863
PstI
SalI
BVDV
E1
PstI
3803
XbaI
BGH Term
BclI
3256
BamHI
BglII
BglII

Figure No. 8

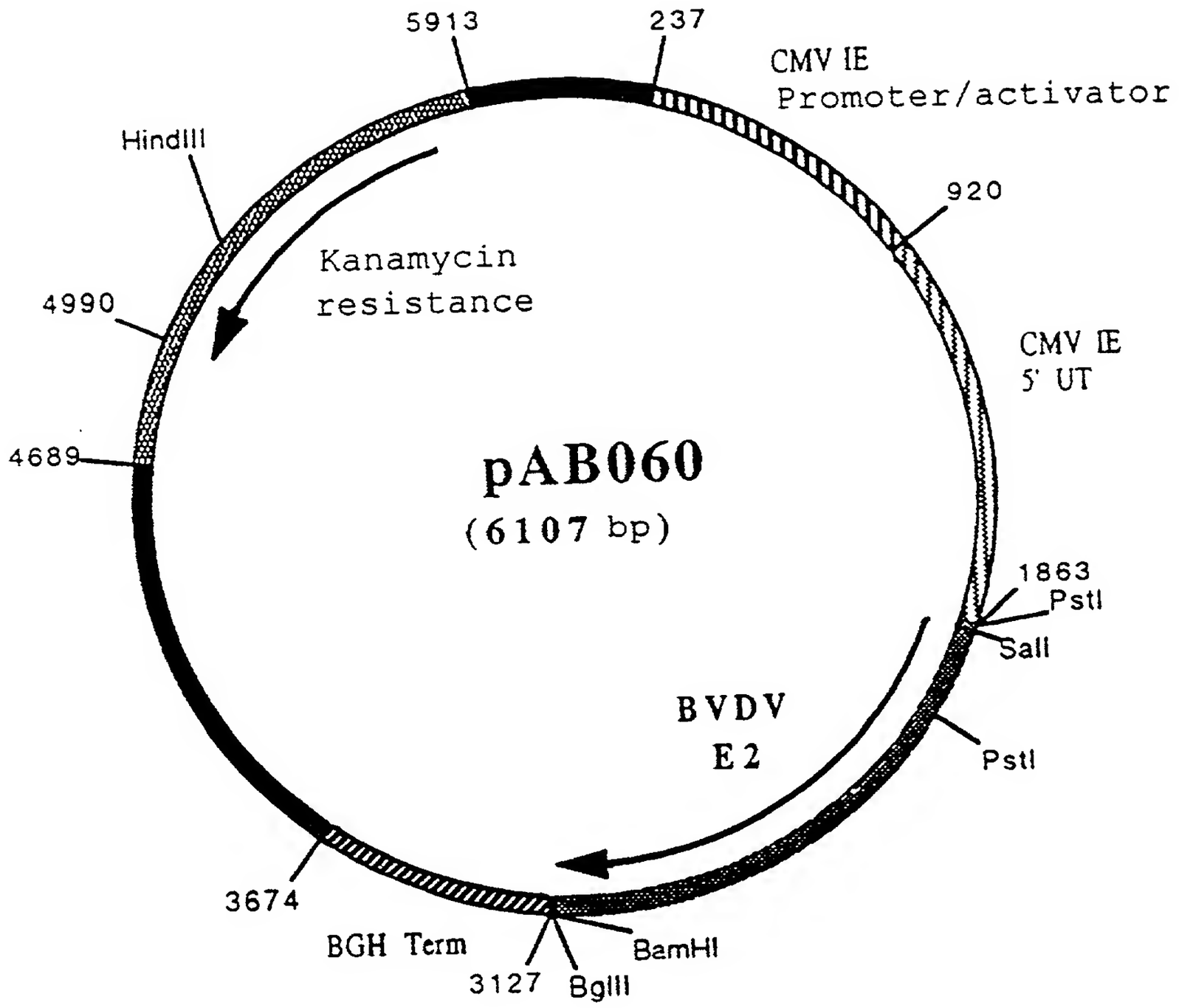
5913
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
4990
CMV IE
5' UT
4689
pAB060
(6107 bp)
1863
PstI
SalI
BVDV
E2
PstI
3674
BGH Term
BamHI
3127
BglII

Figure No. 9

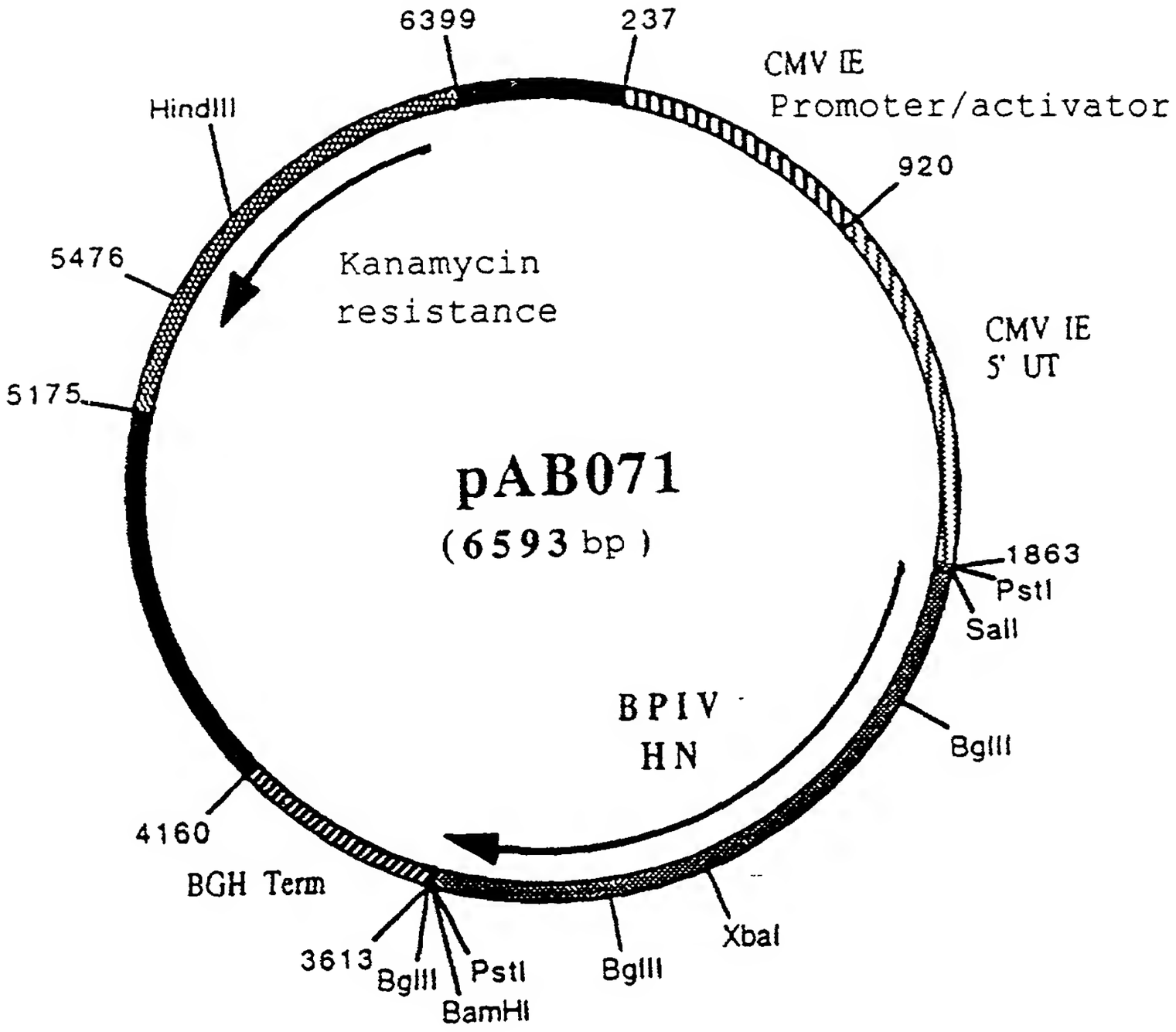
6399
237
CMV IE
Promoter/activator
920
CMV IE
5' UT
1863
PstI
SalI
BglII
Xbal
BglII
PstI
BamHI
BglII
3613
4160
BGH Term
BPIV
HN
5175
5476
HindIII
Kanamycin
resistance
pAB071
(6593 bp)

Figure No. 10

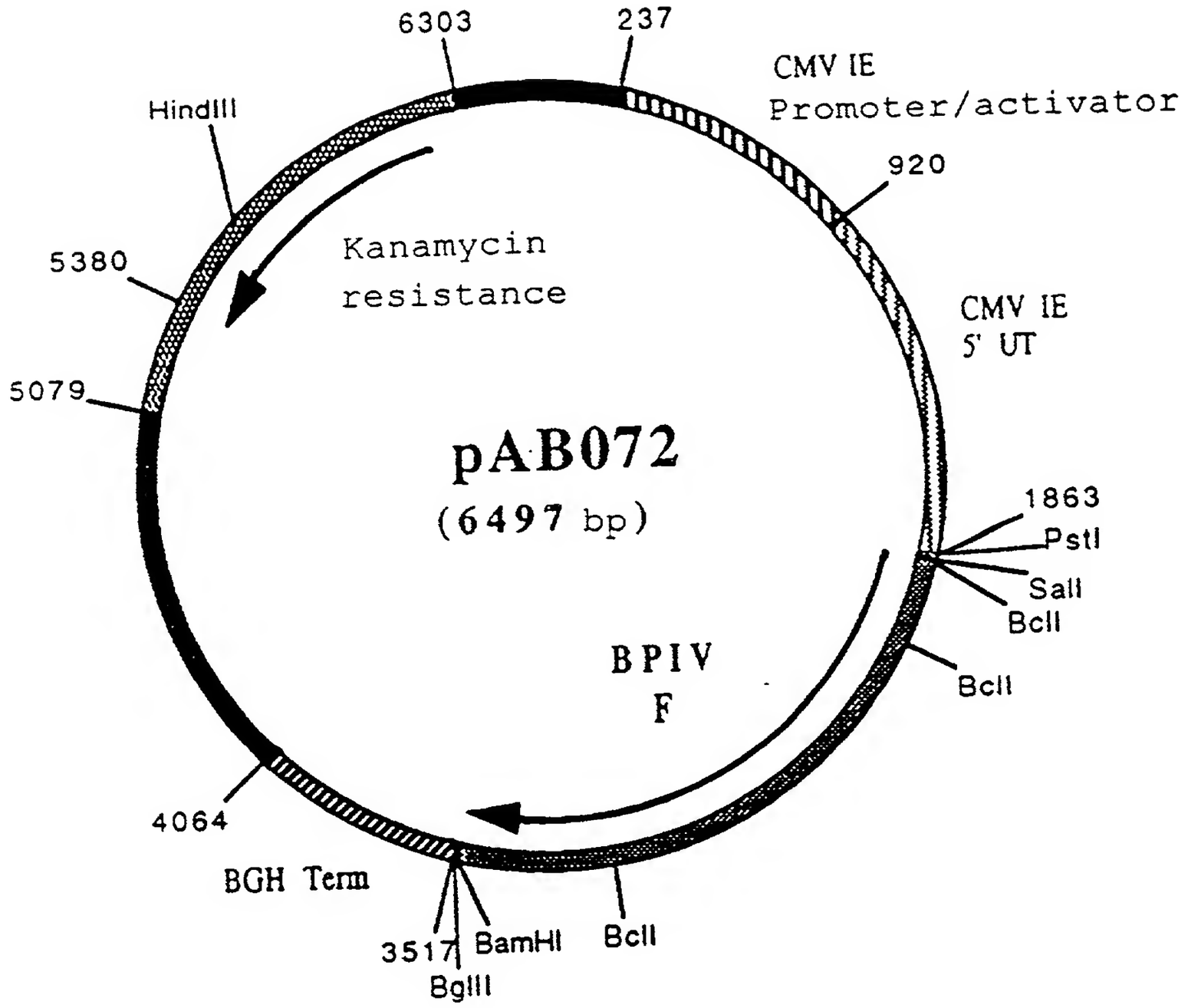
6303
237
CMV IE
Promoter/activator
HindIII
920
Kanamycin
resistance
5380
CMV IE
5' UT
5079
pAB072
(6497 bp)
1863
PstI
SalI
BclI
BPIV
F
BclI
4064
BGH Term
3517
BamHI
BclI
BglII

Figure No. 11